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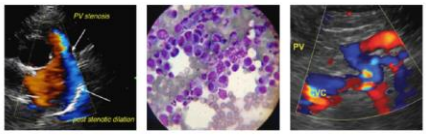

SonoPath
Clinical Sonography & Telecytology
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PATIENT

Abbey Springsguth
51890A

SPECIES

Canine

BREED

American Eskimo

SEX

FS

AGE

14 yr

WEIGHT

13.8 kg

INTERPRETED BY

Beth Johnson, DVM
DACVIM

IMAGING PERFORMED BY

Tom McNeill

HOSPITAL NAME

SVS Imaging CT

REFERRING VET

Madison Veterinary Specialists-Dr. Calhoun

INVOICE

11035ag

DATE

07/05/2022

PRESENTING CLINICAL SIGNS

History: Abbey presented on 7/4 for acute onset of lethargy for 24 hours. The owners were outside with Abbey yesterday, and noticed that she seemed less active/interested when they brought her back into the house. Her owners offered her water, which she drank yesterday, and had Abbey relax in the A/C. She ate her dinner last night, but vomited undigested kibble afterwards. Today, Abbey has not been interested in eating or drinking at all. She defecated once this morning in the house (her owners described it as being mucoid with a bit of blood), but hasn't urinated today. She also did not rise to greet her mom today and has been reluctant to move, which isn't like her. Abbey has a history of elevated liver enzymes for the last ~4 years.

Abnormal PE/Chem/CBC/UA Results: AFAST scan revealed a large, bright liver, cavitated midabdominal mass. Trace of free fluid. In-house bloodwork: RBC - 4.58 (5.65-8.87) HCT - 28.1 (37.3-61.7) HGB - 10.7 (13.1-20.5) MCV - 61.4 (61.6-73.5) WBC - 23.76 (5.05-16.76) NEU- 18.39 (2.95-11.64) Mono- 1.82 (0.16-1.12) EOS - 0.02 (0.06-1.23) ALT- 143 (10-125) ALKP- >2000 (23-212) GGT- 45 (0-11) Urinalysis: SG - 1.032

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is moderately distended. It has a normal uniform wall thickness (<0.2 cm). Contents include primarily anechoic fluid combined with both gravity dependent and suspended echogenic non-shadowing debris within the fluid. No masses or cystoliths are observed. The trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

The right kidney is normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased echogenicity and mild loss of corticomedullary distinction. There is no evidence of mineral or infarcts observed. Non-obstructive linear multifocal hyperechoic diverticular foci with acoustic shadowing are noted. The right kidney measured 5.77 cm in length.

The left kidney is normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased echogenicity and mild loss of corticomedullary distinction. There is no evidence of mineral or infarcts observed. Non-obstructive linear multifocal hyperechoic diverticular foci with acoustic shadowing are noted. The left kidney measured 5.49 cm in length.

Adrenal Glands

Right adrenal gland is mildly enlarged in size (1.5 cm at cranial pole and 1.1 cm at caudal pole) with mild heterogeneous parenchymal changes. No capsular expansion was noted. Visible surrounding vasculature appears normal.

Left adrenal gland is normal in size (0.57 cm at cranial pole and 0.74 cm at caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

Spleen

Spleen is generally normal in size and shape with a smooth capsular contour. Near the head of the spleen an approximate 1.0 cm nondisruptive nodule with a hyperechoic center was noted. Parenchyma is diffusely nodular in appearance characterized by small discrete hypoechoic nodules. Splenic vasculature appears normal.

Liver

Liver contains multiple heterogeneous cavitated masses. In the mid liver, 1 mass measures approximately 4x6 cm. In the caudal right liver, extending caudal to the stomach, a second mass measures approximately 7-8 cm in diameter. A third mass, approximately 3 cm in diameter, similar in appearance,

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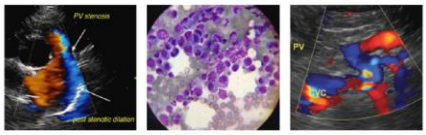

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is noted in the mid cranial abdomen caudal to the stomach and medial to the duodenum. Definitive liver origin cannot be determined vs possible pancreatic, node, other origin.

A small anechoic cyst is also noted in the caudal ventral left lateral liver. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.

Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

Pancreas

Pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

There is a scant amount of free fluid appreciated in these images. Medial iliac, hepatic and gastric lymph nodes are enlarged and hypoechoic.

ULTRASONOGRAPHIC FINDINGS

- Multiple cavitated liver masses most concerning for infiltrative neoplasia such as hemangiosarcoma or metastatic neoplasia. The smaller mass caudal to the stomach cannot be definitively attached to the liver in these images. Other differentials, given location, include pancreatic origin or lymph node. Spleen cannot be ruled out.
- Splenic micronodular hyperplasia with a heterogeneous non capsule disrupting nodule-This nodular change is often associated with benign aging nodular hyperplasia. Infiltrative neoplasia, however, including both early hemangiosarcoma as well as round cell neoplasia cannot be ruled out.
- Free fluid is expected to be hemorrhage given the patient history
- Reactive lymphadenopathy in the area of the medial iliac lymph nodes as well as suspected metastatic lymph nodes in the cranial abdomen
- Age related kidney changes with mild bilateral pyelectasia, cortical cysts and nondisruptive mineralization
- Urinary bladder debris
- Mild right adrenomegaly-hyperplasia or potentially an adrenal adenoma

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Three view thoracic radiographs are recommended for further assessment of cardio-pulmonary status as well as to further evaluate for any evidence of metastatic disease, if not recently evaluated.
A FNA of the liver masses could be considered if the patient's coagulation status is appropriate,

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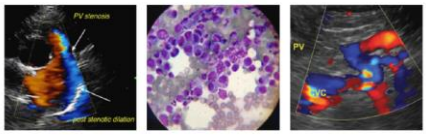

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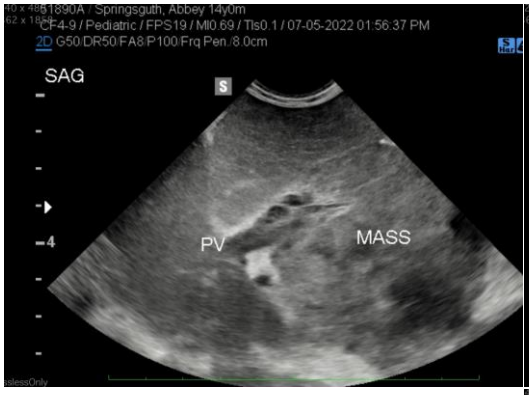
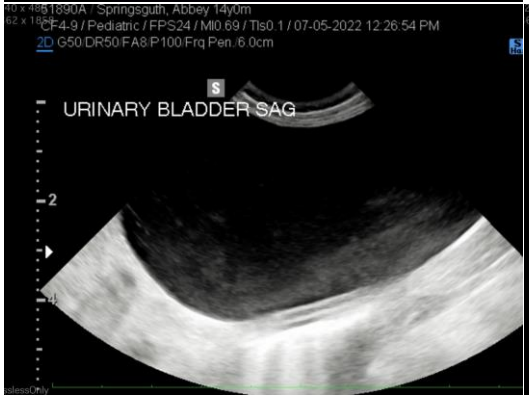
however there is a considerable risk of hemorrhage with aspiration. Exploratory laparotomy could be considered for excisional biopsies and removal of as much visibly gross disease as possible. Given the multifocal nature of the liver masses, full resection is considered unlikely. If surgery is elected a pre surgical planning abdominal CT scan could be considered.





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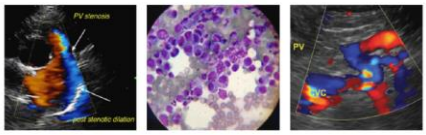

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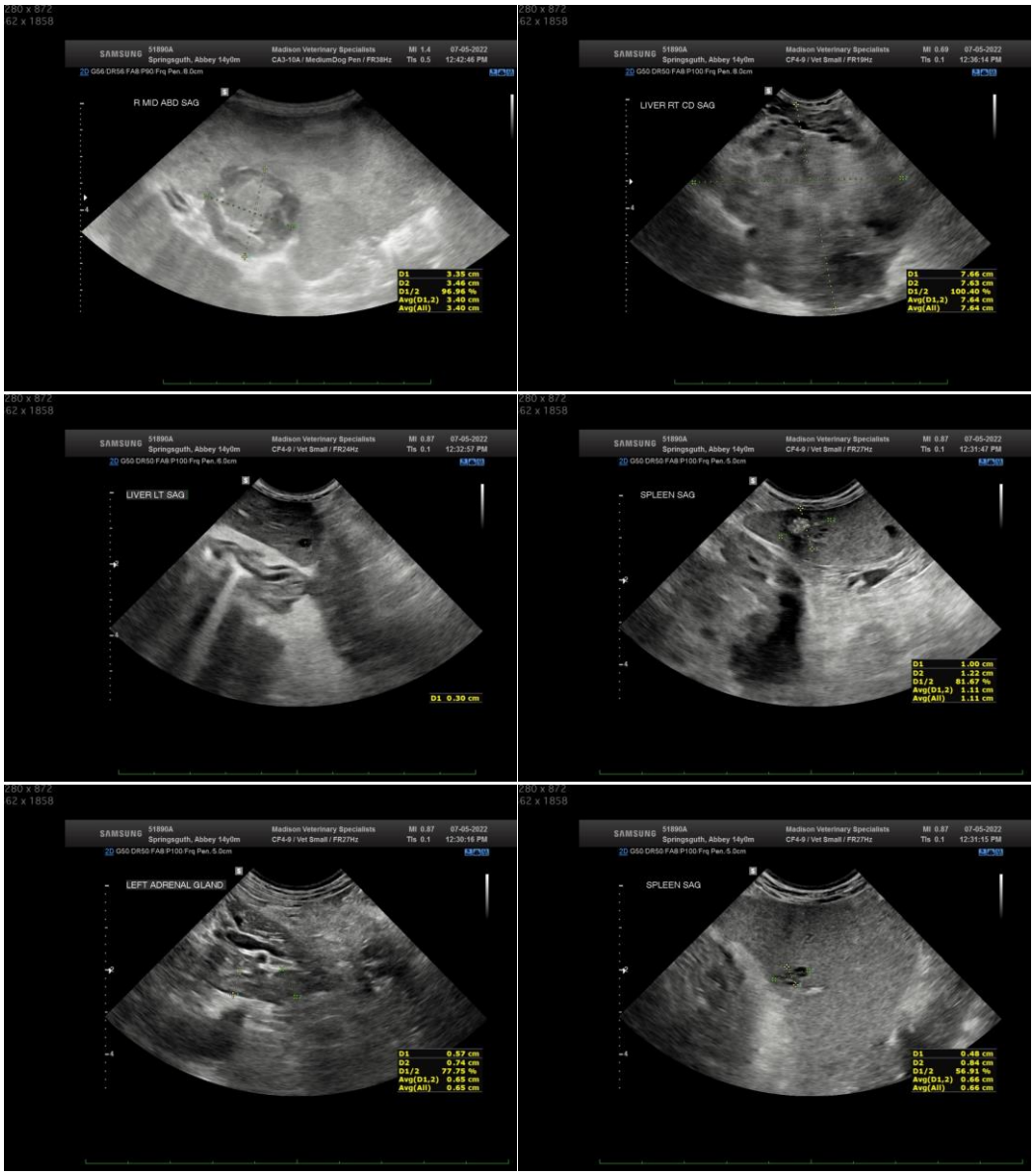

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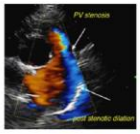
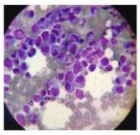
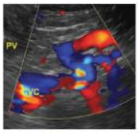

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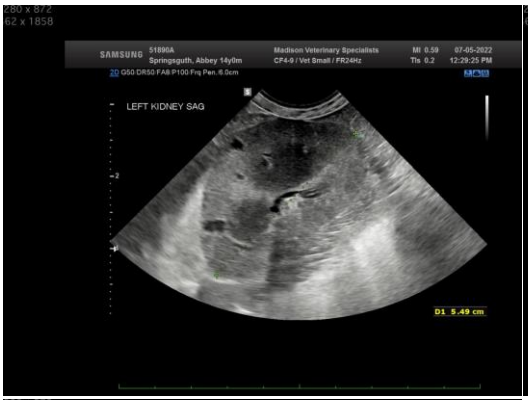

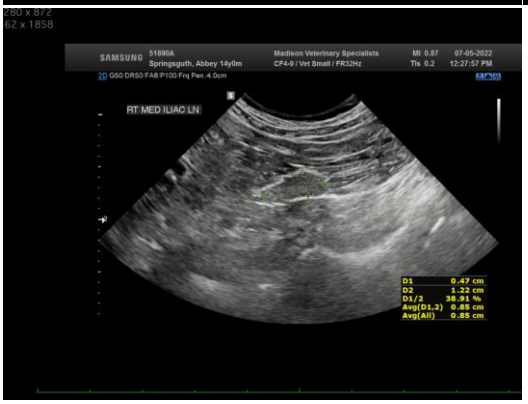

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Beth Johnson, DVM DACVIM

Beth.Johnson@SonoPath.com